

ASSIGNMENT – 4

OBJECTIVE

To develop a code and make connections in wokwi for ultrasonic sensor, whenever distance is less than 100 cm send “Alert” to IBM cloud and display in device recent events.

CODE

```
const int TRIG_PIN = 7;
const int ECHO_PIN = 8;

const unsigned int MAX_DIST = 23600;
void setup() {

  pinMode(TRIG_PIN, OUTPUT);
  digitalWrite(TRIG_PIN, LOW);

  pinMode(ECHO_PIN, INPUT);

  Serial.begin(9600);
}
void loop() {

  unsigned long t1;
  unsigned long t2;
  unsigned long pulse_width;
  float cm;
  float inches;

  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);

  while (digitalRead(ECHO_PIN) == 0);

  t1 = micros();
```

```
t1 = micros();
while (digitalRead(ECHO_PIN) == 1);
t2 = micros();
pulse_width = t2 - t1;

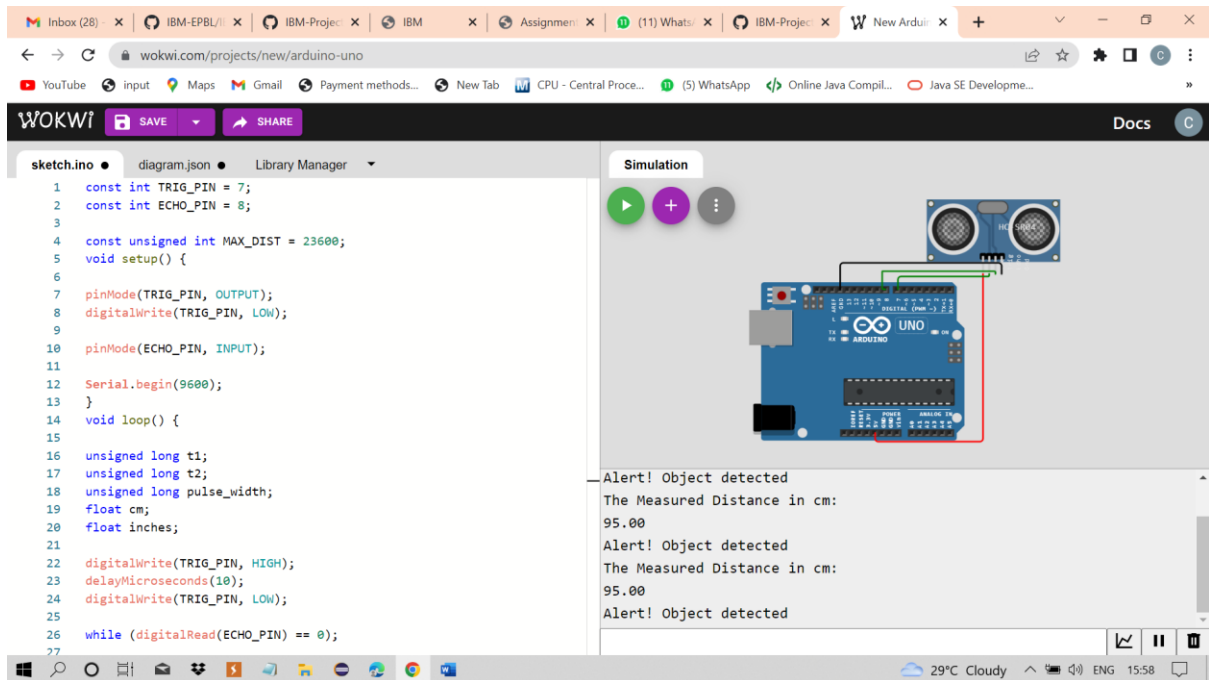
cm = pulse_width / 58;
inches = pulse_width / 148.0;

if (pulse_width > MAX_DIST) {
  Serial.println("Out of range");
}
else
{
  Serial.print("The Measured Distance in cm: "); Serial.println(cm);

  if (cm < 100)
  {
    Serial.println("Alert! Object detected");
  }
}

delay(1000);
}
```

STIMULATION



WOKWI LINK

<https://wokwi.com/projects/346849052469494355>